Better Plants Resources for Achieving the UN's Sustainable Development Goals

BETTER BUILDINGS , BETTER PLANTS PROGRAM

About the Better Plants Program

The U.S. Department of Energy's (DOE's) Better Buildings, Better Plants program is a voluntary initiative wherein manufacturers and water treatment agencies partner with DOE to set aggressive energy efficiency and sustainability goals. In return, partners receive robust technical assistance, access to innovation and resources, peer-to-peer exchange and networking opportunities, and national recognition for their achievements. As of Fall 2021, over 250 Better Plants partners that encompass 13.8% of the total U.S. manufacturing energy footprint had collectively reduced their energy use by 1.9 quadrillion BTUs while decreasing costs by $9.3 billion.

Many Better Plants partners are either participants or signatories of the United Nations (UN) Global Compact, which engages businesses to align their corporate strategies and operations with the UN Sustainable Development Goals (SDGs). Participants are granted full access to UN Global Compact activities and resources, while signatories are given limited access. Today, the UN Global Compact has more than 9,500 company signatories from over 160 countries, making it the world's largest corporate sustainability initiative.

Figure 1. Better Plants partners that are participants in the UN Global Compact and committed to aligning their business practices with the SDGs.

What are the United Nations' Sustainable Development Goals?

The UN's Sustainable Development Goals (SDGs) are a collection of 17 goals developed by the UN General Assembly that describe global sustainable development priorities and aim to direct global action around a common set of targets. The SDGs call for the widespread mobilization of governments, businesses, and civil society to address an array of global challenges, including climate change, clean water, food shortages, inequality, and poverty.

In 2015, all 193 Member States of the UN adopted the SDGs as part of the larger 2030 Agenda for Sustainable Development, which lays out a strategy for achieving the SDGs by 2030.

The SDGs present an opportunity for all companies, regardless of industry or size, to integrate sustainability into their business practices. Companies that align to the SDGs can experience a range of benefits, including new market growth opportunities, improvements in operational efficiency, reductions in operational cost, and enhanced stakeholder trust. **Companies interested in aligning to the SDGs are encouraged to utilize the SDG Compass, which provides business-specific guidance, tools, and indicators that support companies in setting goals and measuring their contribution.** The SDG Compass also describes the specific roles that companies can play in advancing each goal and examples of key business actions and solutions. Companies typically focus their efforts on 4-5 of the SDGs.

Figure 2. The UN's 17 Sustainable Development Goals

Better Plants resources for achieving the UN's Sustainable Development Goals

DOE's Better Plants program provides trainings, technical assistance, and software and tools that provide direct assistance to companies as they work towards the SDGs related to water, energy, and industrial sustainability practices. DOE encourages companies to take advantage of these no-cost resources, described in detail below:

Goal 6: Ensure availability and sustainable management of water and sanitation for all

Target 6.4: *By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity*

Better Plants works with partners to **increase water-use efficiency** and **implement integrated water resource management** at all levels, including through transboundary cooperation as appropriate.

DOE Resources

Virtual In-Plant Trainings on Industrial Water Efficiency and Wastewater Treatment:

DOE offers expert-led, multi-day workshops that train participants in a broad range of water-related topics, including water system fundamentals, conducting facility-level water assessments, and identifying energy, water, and cost-saving opportunities at facilities and wastewater treatment plants.

Web Link

Water Savings Network Solutions:

Participants in the Water Savings Network regularly publish innovative case studies that describe successful approaches to conserving water and improving water-use efficiency. Each case study describes the company policies enacted, the implementation process, metrics for evaluating success, water reduction outcomes, and tools and resources utilized.

Web Link

Webinars on Water Efficiency and Reducing Water Waste:

DOE offers informative webinars that focus on water-related topics, including water efficiency, reducing water waste, benchmarking, and accelerating technological innovation in the water space. These webinars provide an overview of DOE's tools and resources that can assist in tracking water consumption and implementing cost-saving opportunities.

Web Link

Water Management Strategies Guide for Manufacturers:

This guide provides an overview of lessons learned from the DOE Water Savings Pilot, including how to focus initial efforts, how to establish water-use baselines, and effective water management and reduction strategies.

Web Link

Plant Water Profiler (PWPEx) Tool:

This DOE tool provides an overview of an industrial site's water intake, wastewater disposal, and the "true cost" of water by individual systems in the plant. The Plant Water Profiler tool assesses water efficiency and provides a list of measures and opportunities.

Web Link

Sustainable Wastewater Infrastructure of the Future (SWIFt) Accelerator:

DOE partners with water resource recovery facilities to accelerate the adoption of advanced technologies, data management and reporting best-practices, and financing for infrastructure improvement. Partners aim to increase energy efficiency of facilities by at least 25%.

Web Link

Goal 7: Ensure access to affordable, reliable, sustainable, and modern energy for all

Target 7.2: *By 2030, increase substantially the share of renewable energy in the global energy mix*

Target 7.3: *By 2030, double the global rate of improvement in energy efficiency*

Better Plants works with partners to **reduce their energy intensity** by 25% over a 10-year period, with an increasing focus on helping partners decarbonize and **transition to renewable energy sources**.

DOE Resources

Technical Assistance from Technical Account Managers:

Better Plants partners receive tailored technical support from Technical Account Managers (TAMs) that are subject-matter experts in various industrial processes and assist with developing energy management plans, identifying energy-saving options, and tracking energy performance metrics.

Web Link

REopt Tool:

The Renewable Energy Integration & Optimization (REopt) platform performs energy system optimization analyses to recommend the optimal mix of renewable energy, conventional energy, and energy storage technologies for a site. While the REopt tool currently requires NREL support, there is also a REopt Lite Web tool that allows users to evaluate solar, wind, and battery storage potential.

Web Link

Diagnostic Equipment Program:

Better Plants partners have access to a variety of instruments and tools that collect energy data and improve equipment performance. The program enables partners to test tools on-site in a live manufacturing environment prior to purchasing them.

Web Link

PEPEx Tool:

The Plant Energy Profiler Excel (PEPEx) tool is software that helps manufacturers quickly evaluate their energy use and identify opportunities for savings in just an hour. PEPEx provides users with a printable report that describes energy purchases, energy consumption, opportunities for energy and cost savings, and next steps for plant managers.

Web Link

MEASUR Software Suite:

MEASUR (Manufacturing Energy Assessment Software for Utility Reduction) is a suite of open-source software programs that allows end users to assess energy use for most major manufacturing support systems, and can assist facilities in increasing energy efficiency and conducting “Energy Treasure Hunts”.

Web Link

Financing Navigator:

This publicly available, no cost, online tool allows organizations to explore a broad range of financing options for energy efficiency and renewable energy projects. The tool connects to the larger Financial Ally community, which consists of banks and lenders that are actively pursuing opportunities to finance projects.

Web Link

Supply Chain Initiative:

Better Plants works with partners to improve energy efficiency around their supply chains by encouraging suppliers to utilize Better Plants resources and collectively set and achieve energy reduction goals. Suppliers typically commit to reducing their energy intensity by 25% over ten years.

Web Link

Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Target 9.2: *Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries*

Target 9.4: *By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities*

Better Plants and DOE's complementary programs offer a range of resources that **promote industrial sustainability** and **inclusive workforce development**. Better Plants also supports partners in identifying and implementing **cost-effective infrastructure upgrades and retrofits** that improve energy and water efficiency and reduce emissions.

DOE Resources

Virtual In-Plant Trainings:

DOE offers multi-day workshops led by industry-recognized experts that train participants to identify and implement energy- and cost-saving projects. Trainings focus on a range of systems, including compressed air, process heating, steam, and pumping.

Web Link

National Lab Innovation Portal:

DOE's National Laboratories work with partners to provide advanced technical assistance, solve scientific challenges, and answer innovative questions. Partners also can tour and use National Lab facilities.

Web Link

Industrial Assessment Centers (IACs):

DOE's Industrial Assessment Centers consist of university-based engineering students and faculty that perform no-cost energy assessments and make energy-saving recommendations for small- and medium-sized manufacturers.

Web Link

Industrial Technology Validation Pilot:

This pilot aims to accelerate the adoption of high-impact energy efficiency and decarbonization technologies in industrial settings. DOE's National Laboratories will validate technology performance and share results to facilitate widespread deployment.

Web Link

Better Buildings Solutions Center:

The online Better Buildings Solutions Center features a broad range of case studies that describe how partners have achieved improvements in energy efficiency and energy management. Partner case studies include Implementation Models, Showcase Projects, and Solutions at a Glance.

Web Link

50001 Ready Program:

The DOE 50001 Ready program recognizes facilities and organizations that attest to implementing an energy management system in accordance with the ISO 50001 standard (no audit required). The no-cost online 50001 Ready Navigator tool provides a step-by-step approach to implementing an ISO 50001-based energy management system.

Web Link

Opportunities for Networking and Peer-to-Peer Knowledge Sharing:

Better Plants offers a variety of opportunities for partners to network and exchange best practices with one another, including the Better Buildings, Better Plants Summit, industrial sector meetups, and discussion sessions.

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Combined Heat and Power (CHP) Deployment Program:

DOE's comprehensive CHP deployment program includes technical assistance through CHP Technical Assistance Partnerships and a range of no-cost resources, including webinars and the CHP e-Catalog.

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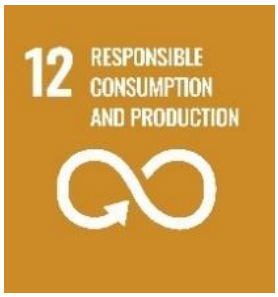

Goal 12: Ensure sustainable consumption and production patterns

Target 12.2: *By 2030, achieve the sustainable management and efficient use of natural resources*

Target 12.5: *By 2030, substantially reduce waste generation through prevention, recycling, and reuse*

Better Plants works with partners to **reduce waste** and promote **sustainable and efficient management of energy and water** natural resources.

DOE Resources

Case Studies on Waste Reduction and Diversion:

Waste Reduction Pilot partners regularly publish case studies that describe their process and solutions for reducing waste. Each case study includes policies enacted, implementation strategies, and waste reduction outcomes.

Web Link

Waste Reduction Pilot:

In this pilot, DOE worked with partners to determine the appropriate metrics, goals, and opportunities to reduce waste, and to evaluate the effectiveness of waste reduction methods, including recycling, landfill diversion, energy recovery, and circularity.

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Goal 13: Take urgent action to combat climate change and its impacts

Target 13.2: *Integrate climate change measures into national policies, strategies, and planning*

Better Plants is increasingly focused on providing resources and technical assistance that help manufacturers **incorporate climate change measures into strategies and planning**. Better Plants offers tools and resources that help industry **decarbonize** and **transition to renewable energy sources** in order to mitigate the worst impacts of climate change.

DOE Resources

Low Carbon Pilot:

DOE is working with partners to evaluate their greenhouse gas emissions and showcase real world pathways to achieve low carbon manufacturing. Through the pilot, DOE will evaluate the effectiveness of various industrial decarbonization methods, including energy efficiency, low carbon production technologies, targeted fuel switching, and off-site renewable generation with on-site consumption.

Web Link

Better Climate Challenge:

The Better Climate Challenge is a new initiative where partnering organizations commit to reducing portfolio-wide Scope 1 & 2 emissions by 50% by within 10 years, with energy-intensive industries committing to a 25% reduction. In return, DOE provides technical assistance and peer-to-peer exchange opportunities.

Web Link

Low Carbon Action Plan Tool:

DOE has developed a Low Carbon Action Plan Tool that helps partners develop pathways to decarbonization for selected plants. The tool includes a proposed priority waterfall that includes prioritizing energy efficiency, followed by on-site renewables, grid interactivity, off-site renewables, and lastly, RECs and offsets.

Web Link

DOE Resources

Electrification Impact Calculator:

This ORNL tool can be used to evaluate the cost and emissions reduction associated with replacing fuel-based equipment with electrical equipment. The calculator is grid region-specific and output rates are determined by the EPA and Electronic Code of Federal Regulations.

Web Link

Carbon Inventory Calculator:

This ORNL tool helps users quantify their carbon dioxide emissions by inputting their usage of combustion fuel, biofuel, purchased gases, purchased electricity from the grid, and fuel for transportation.

Web Link

DOE's Better Plants Program is committed to providing high-quality resources and technical assistance that help companies align to the UN Sustainable Development Goals related to water, energy, and industrial sustainability practices.

To learn more about Better Plants and become a partner, email BetterPlants@ee.doe.gov or visit https://betterbuildingssolutioncenter.energy.gov/better-plants/join